

valve must be directed outside the protective housing.

(e) Loading and unloading valves must be trimmed with Hastelloy B or C, monel, or other approved material, and identified as "Vapor" or "Liquid". Excess flow valves must be installed under all liquid and vapor valves, except safety relief valves.

(f) A thermometer well may be installed.

(g) Only an approved gaging device may be installed.

(h) A sump must be installed in the bottom of the tank under the liquid pipes.

(i) All gaskets must be made of, or coated with, polytetrafluoroethylene or other approved material.

(j) The tank car tank may be equipped with exterior cooling coils on top of the tank car shell.

(k) The jacket must be stenciled, adjacent to the water capacity stencil,

MINIMUM OPERATING TEMPERATURE — °F.

(l) The tank car and insulation must be designed to prevent the pressure of the lading from increasing from the pressure at the maximum allowable filling density to the start-to-discharge pressure of the pressure relief valve within 30 days, at an ambient temperature of 90° F.

[Amdt. 179-32, 48 FR 27708, June 16, 1983, as amended at 48 FR 50441, Nov. 1, 1983; 49 FR 24317, June 12, 1984; 49 FR 42736, Oct. 24, 1984; Amdt. 179-45, 55 FR 52728, Dec. 21, 1990; 66 FR 45390, Aug. 28, 2001; 67 FR 51660, Aug. 8, 2002; 68 FR 75758, 75760, Dec. 31, 2003]

§ 179.103 Special requirements for class 114A * * * tank car tanks.

(a) In addition to the applicable requirements of §§ 179.100 and 179.101 the following requirements shall be complied with:

(b) [Reserved]

§ 179.103-1 Type.

(a) Tanks built under this section may be of any approved cross section.

(b) Any portion of the tank shell not circular in cross section shall have walls of such thickness and be so reinforced that the stresses in the walls caused by a given internal pressure are no greater than the circumferential stresses which would exist under the

same internal pressure in the wall of a tank of circular cross section designed in accordance with paragraphs § 179.100-6 (a) and (b), but in no case shall the wall thickness be less than that specified in § 179.101.

(c) [Reserved]

(d) Valves and fittings need not be mounted on the manway cover.

(e) One opening may be provided in each head for use in purging the tank interior.

[29 FR 18995, Dec. 29, 1964. Redesignated at 32 FR 5606, Apr. 5, 1967, and amended by Amdt. 179-50, 60 FR 49077, Sept. 21, 1995]

§ 179.103-2 Manway cover.

(a) The manway cover must be an approved design.

(b) If no valves or measuring and sampling devices are mounted on manway cover, no protective housing is required.

[29 FR 18995, Dec. 29, 1964. Redesignated at 32 FR 5606, Apr. 5, 1967, and amended by Amdt. 179-50, 60 FR 49077, Sept. 21, 1995]

§ 179.103-3 Venting, loading and unloading valves, measuring and sampling devices.

(a) Venting, loading and unloading valves, measuring and sampling devices, when used, shall be attached to a nozzle or nozzles on the tank shell or heads.

(b) These valves and appurtenances must be grouped in one location and, except as provided in § 179.103-5, must be equipped with a protective housing with cover, or may be recessed into tank shell with cover. An additional set grouped in another location may be provided. Protective housing with cover, when used, must have steel side-walls not less than three-fourths inch in thickness and a metal cover not less than one-fourth inch in thickness that can be securely closed. Underframe sills are an acceptable alternate to the protective housing cover, provided the arrangement is of approved design. For fittings recessed into tank shell, protective cover must be metal and not less than one-fourth inch in thickness.

(c) When tank car is used to transport liquefied flammable gases, the interior pipes of the loading, unloading, and sampling valves must be equipped